

IN THE ABSTRACT:

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A digital broadcast transmitting and receiving system and a signal processing method thereof that improves the receiving performance of the system. A digital broadcast transmitter includes a randomizer to receive and randomize a data stream into a specified position of which stuff bytes are inserted, a replacement sequence generator to generate known data including a predefined sequence, a stuff-byte exchange unit to insert the known data into the specified position of the data stream into which stuff bytes are inserted, an encoder to encode the data stream output from the stuff-byte exchange unit for an error correction, and a transmission unit to modulate the encoded data stream, RF-convert the modulated data stream and transmit the RF- converted data. The digital broadcast receiving performance is improved even in an inferior multi-path channel by detecting the known data from the received transmission and using the known data for synchronization and equalization in a digital broadcast receiver.